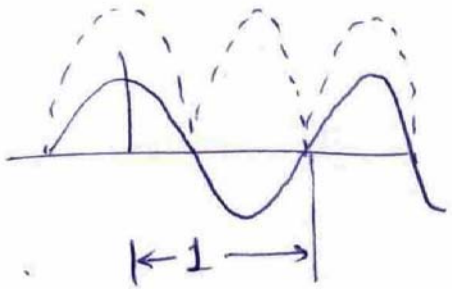
6. a) $x(t) = \cos^2(2\pi t)$

Time period of $\cos(2\pi t)$

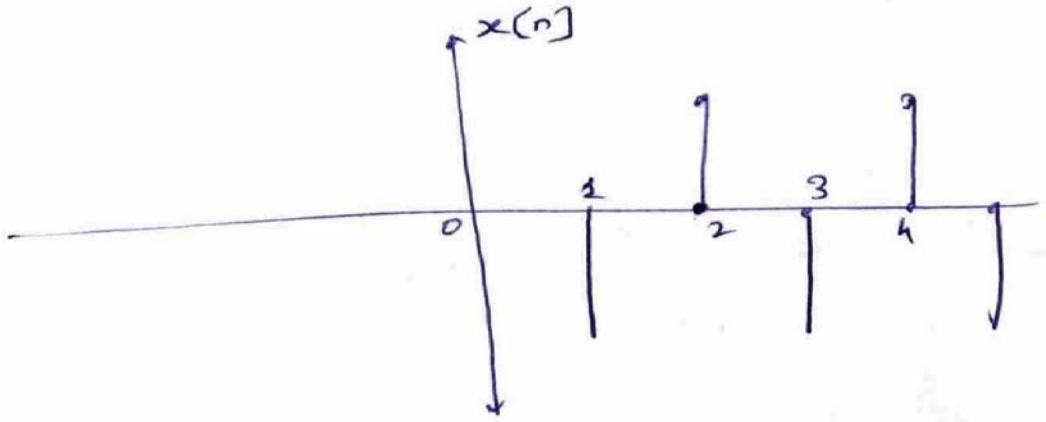
$$\omega = 2\pi = \frac{2\pi}{T}$$

$$\therefore T = 1$$



∴ Time period of $\cos^2(2\pi t)$ is 0.5 sec.

b) ~~x(t)~~ $x[n] = (-1)^n$ ~~n≥0~~ $n > 0$



It is periodic for $n > 0$, with fundamental period of 2 sample.